Database for the Geologic Map of the Chelan 30-Minute by 60-Minute Quadrangle, Washington (I-1661)

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Digital Database Description for USGS Miscellaneous Investigations Map I-1661

Introduction

The original geologic map for this database was published in 1987, based on geologic mapping and compilation by the authors during 1975 through 1980. The digital database was prepared from from drafted publication materials and published materials, converted to PDFs or vector ARC/INFO coverages by R.W. Tabor from 2003-2005. Together with the geologic pamphlet, the database provides georeferenced information on the geologic structure and stratigraphy of the area covered. The database delineates map units that are identified by general age and lithology following the stratigraphic nomenclature of the U.S. Geological Survey. The spatial resolution (scale) of the database is 1:100,000 or smaller. The content and character of the database, as well as two methods of obtaining the database, are described below.

Digital database and metadata package (DS-184)

The database and metadata package includes geologic map database files for the Chelan 30 x 60 minute quadrangle. The digital maps, or coverages, along with their associated INFO directory have been converted to uncompressed ARC/INFO export files. ARC export files promote ease of data handling, and are usable by some Geographic Information Systems in addition to ARC/INFO (see below for a discussion of working with export files). There is no raster data in this package. The ARC export files and associated ARC/INFO coverages, as well as the additional digital material included in the database, are described below:

ARC/INFO export file	Resultant Coverage	Description of Coverage
chelangeology.e00	chelangeology	geologic contacts, faults, rock units
chelfaxes.e00	chelfaxes	fold axes and cross-section lines
chelpoints.e00	chelpoints	locations of age samples small outcrops of limestone or marble and ultramafic rocks

chelpatterns.e00	chelpatterns	areas of dike swarms of granite porphyry or rhyolite, extent of incipient block slides, sheared rock and areas by percentage of light colored tonalite in banded gneiss unit. Original data for this latter depiction was presented on published map as dots at different densities. For this coverage, percentages were estimated from dot pattern
cheltuffiso.e00	cheltuffiso	mapped tuff beds too thin to show thickness at map scale; crests of morains; isograds
chelstructur.e00	chelstructur	structural symbols: bedding, foliation, and lineation, these symbols will not show on screen or plot without appropriate symbol sets (available in *Alacarte*)
chelrocksamp.e00	wenrocksamp	Locations of 204 rock samples archived and stored at North Cascades National Park, Marblemount, WA

The database package also includes the following files: Description of the Map Units (DMU), text only (chelanDMU.pdf), metadata (metadata.txt) and this readme file (chel_readme.pdf).

Also downloadable from http://pubs.usgs.gov/imap/i1661/ in separate PDF files are: geologic map pamphlet (including illustrations) and the colored geologic map (including correlation chart and Description of Map Units DMU, but in slightly different forms from the published map)

The following supporting directory is not included in the database package, but is produced in the process of reconverting the export files into ARC coverages:

info/ INFO directory containing files supporting the databases.

Caution

Data in these files is essentially unchanged from publication of I-1661 in 1987. More recent data is available in published geologic literature.

Tar files

The seven export files described above are stored in tar (UNIX tape archive) files. A tar utility is required to extract the database from the tar file. This utility is included in most UNIX systems,

and can be obtained free of charge over the Internet from Internet Literacy's Common Internet File Formats Webpage (http://www.matisse.net/files/formats.html). The tar files have been compressed, and may be uncompressed with **gzip**, which is available free of charge over the Internet via links from the USGS Public Domain Software page (http://edcwww.cr.usgs.gov/doc/edchome/ndcdb/public.html). For software that enables the user to uncompress and extract the database files on a Windows or Macintosh computer, go to the U.S. Geological Survey (http://cpg.cr.usgs.gov/pub/software.html) or WinZip (http://www.winzip.com/). When the tar file is uncompressed and the data is extracted from the tar file, a directory is produced that contains the data in the package as described above. The specifics of the tar files are listed below:

Size:

Chelcovers3.tar.gz is about 2 MB. Uncompressed and untarred the ARC/INFO export files are:
chelangeology.e00 – 5.2 MB
chelfaxes.e00 – 106 KB
chelpatterns.e00 – 432 KB
chelpoints.e00 – 78 KB
chelrocksamp.e00 – 138 KB
cheltuffiso.e00 – 98 MB
chelanDMU.pdf –72 KB
chel_readme.doc –80 KB
chelmetadata.doc –212 KB

PDF plot files

Adobe Acrobat PDF (Portable Document Format) files are similar to PostScript plot files in that they contain all the information needed to produce a paper copy of a map or pamphlet and they are platform independent. Their principal advantage is that they require less memory to store and are therefore quicker to download from the Internet. In addition, PDF files allow for printing of portions of a map image on a printer smaller than that required to print the entire map without the purchase of expensive additional software. In test plots we have found that paper maps created with PDF files contain almost all the detail of the published maps We recommend the published maps for greatest definition.

To use PDF files, the user must get and install a copy of Adobe Acrobat Reader. This software is available free from the Adobe website (http://www.adobe.com/products/acrobat/readstep2.html). Please follow the instructions given at the website to download and install this software. Once installed, the Acrobat Reader software contains an on-line manual and tutorial.

There are two ways to use Acrobat Reader in conjunction with the Internet. One is to use the PDF reader plug-in with your Internet browser. This allows for interactive viewing of PDF file images within your browser. This is a very handy way to quickly look at PDF files without downloading them to your hard disk. The second way is to download the PDF file to your local hard disk, and then view the file with Acrobat Reader. **We strongly recommend that large map images be handled by downloading to your hard disk, because viewing them within an Internet browser tends to be very slow.**

To print a smaller portion of a PDF map image using Acrobat Reader, it is necessary to cut out the portion desired using Acrobat Reader and the standard cut and paste tools for your platform, and then to paste the portion of the image into a file generated by another software program that can

handle images. Most word processors (such as Microsoft Word) will suffice. The new file can then be printed. Image conversion in the cut and paste process, as well as changes in the scale of the map image, may result in loss of image quality. However, test plots have proven adequate.

Digital database format

The databases in this report were compiled in ARC/INFO, a commercial Geographic Information System (Environmental Systems Research Institute, Redlands, California), with version 3.0 of the menu interface ALACARTE (Fitzgibbon and Wentworth, 1991; Fitzgibbon, 1991; Wentworth and Fitzgibbon, 1991). The files are in COVERAGE (ARC/INFO vector data) format. Coverages are stored in uncompressed ARC export format (ARC/INFO version 7.2.1 for Unix). ARC/INFO export files (files with the .e00 extension) can be converted into ARC/INFO coverages in ARC/INFO (see below) and can be read by some other Geographic Information Systems, such as MapInfo via ArcLink and ESRI's ArcView (version 1.0 for Windows 3.1 to 3.11 is available for free from ESRI's web site: http://www.esri.com/). The digital compilation was done in version 7.2.1 of ARC/INFO for Unix.

To obtain tar files of database packages from the USGS web pages:

The U.S. Geological Survey now supports a set of graphical pages on the World Wide Web. Digital publications (including this one) can be accessed via these pages. The location of the main Web page for the entire USGS is http://www.usgs.gov/

The Web server for digital publications from the U.S. Geological Survey is http://www.usgs.gov/pubprod/digitaldata.html

Go to http://pubs.usgs.gov/ds/2006/184/ to access this database publication.

Go to http://pubs.usgs.gov/imap/i1661/ to access the map publication.

Obtaining hard copy of I-1661

USGS Information Services
Box 25286
Denver Federal Center
Denver, CO 80225-0046

(303)202-4200
1-888-ASK-USGS
FAX: (303)202-4695
e-mail: infoservices@usgs.gov

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References Cited

Fitzgibbon, T.T., 1991, ALACARTE installation and system manual (version 1.0): U.S. Geological Survey Open-File Report 91-587B.

Fitzgibbon, T.T., and Wentworth, C.M., 1991, ALACARTE user interface - AML code and

demonstration maps (version 1.0): U.S. Geological Survey Open-File Report 91-587A.

Wentworth, C.M., and Fitzgibbon, T.T., 1991, ALACARTE user manual (version 1.0): U.S. Geological Survey Open-File Report 91-587C.